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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,459	11/10/2005	David J. Chatting	36-1947	3817

23117 7590 01/13/2009

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EXAMINER

ENTEZARI, MICHELLE M

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

01/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/556,459

Applicant(s)

CHATTING ET AL.

Examiner

MICHELLE ENTEZARI

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-850)
Paper No(s)/Mail Date 6/10/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Inventor's Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/14/08 have been fully considered but they are not persuasive.
2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., sub-regions with predetermined individually recognizable parts of the input image, p14 of remarks, transformations are applied independently to each of the identified feature areas, p 15, caricaturing data processing technique, p16) are not recited in the rejected claim(s), at least prior to amendment. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
3. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-7, and 9-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanz et al. (US 6556196 B1).

Regarding claims 1 and 9, Blanz et al. discloses a method and system of generating a manipulated image (manipulation (detection, recognition, synthesis) of images of 3D objects, col. 1, lines 5-10; manipulate face to emphasize certain characteristics, col. 1, line 65 – col. 2, line 5; using Cyberware (system), col. 2, lines 15-20), said method comprising: receiving an input image to be manipulated (processing at least one 2D object image, abstract; target image can be manipulated even if only single picture, col. 2, lines 45-50; 2D image circuit is adapted to receive one or more input images in an appropriate format, e.g. photographs, col. 12, 25-30); identifying plural feature areas on the input image (dividing faces into plural subregions, col. 6, lines 30-35), each said feature area encompassing a predetermined individually recognizable component of the input image (subregions include eyes, nose, mouth, and surrounding region, col. 6, lines 30-35); and independently applying respectively associated transformations to the image components located within the identified respectively associated feature areas in the input image (subregions morphed independently, col. 6, lines 30-35) so as to generate a manipulated image comprising a composite of the transformed components located in said feature areas (manipulate face to emphasize certain characteristics, col.

1, line 65 – col. 2, line 5; fig. 2 shows face synthesis, col. 4, lines 15-20; subdividing the vector space into independent subspaces, complete 3D face is generated by computing linear combinations separately and then blending them at the borders [creating composite image], col. 6, lines 45-55), each transformed feature area including an independently transformed version of its respectively corresponding component (subregions morphed independently, col. 6, lines 30-35; manipulate a specific attribute while keeping all other attributes as constant as possible, col. 6, lines 60-68).

Blanz et al. do not explicitly disclose these methods are specific to generating a caricatured image. It would have been obvious at the time of the invention to one skilled in the art to use these methods for caricaturing, because Blanz et al. disclose, "A different kind of facial attribute is its "distinctiveness", which is commonly manipulated in caricatures. The automated production of caricatures has been possible for many years [5]. This technique can easily be extended from 2D images to the present morphable face model. Individual faces are caricatured by increasing their distance from the average face. In our representation, shape and texture coefficients α_i , β_i are simply multiplied by a constant factor." (col. 7, lines 40-50), indicating caricaturing was well known at the time of the invention, and the inventor intended for these techniques to be extended in this fashion. Additionally, though this aspect is not discussed in detail in the detailed description, Fig. 3 indicates a "caricature" face.

Regarding claim 7, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method of claim 1 using software.

Regarding claims 2 and 10, Blanz et al. disclose the method and system of claims 1 and 9. Blanz et al. further indicate scaling in Fig.3, as can be seen by the "weight" transformation, and the "fullness of face" description, (col. 7, lines 50-10), which both indicate scaling transformations.

Regarding claims 3 and 11, Blanz et al. disclose the method and system according to claims 1 and 9. Blanz et al. further disclose using several thousand vertices per face to triangulate the surface (col. 2, lines 55-60). Blanz et al. do not explicitly disclose in the main embodiment that the applying step comprises for a point within an input image, determining in which of the identified feature areas the point lies; and calculating the position which the point should take within a corresponding caricatured image feature area as a function of characteristics of the determined input image feature area or of the characteristics of a respectively corresponding feature area representing the same feature within another image.

Blanz et al. do however disclose that in the prior art, a limited number of labeled feature points marked in one face, e.g., the tip of the nose, the corner of the eye and less prominent points on the cheek, must be located precisely in another face, and the number of manually labeled feature points varies from application to application.

It would have been obvious at the time of the invention to one of ordinary skill in the art to calculate the point position in different faces, as disclosed in the prior art, in place of the method in the main embodiment of Blanz et al., because these techniques are known in the prior art, and may make more sense to apply given the knowledge, experience, and equipment available to a user (col. 1, lines 55-60) when caricaturing a face.

Regarding claims 4 and 12, Blanz et al. disclose the method and system according to claims 3 and 11. Blanz et al. further disclose storing a reference image having predefined feature areas (capture changes in wrinkles and map from one face to another, col. 3, lines 55-60; subregions morphed independently, col. 6, lines 30-35; manipulate a specific attribute while keeping all other attributes as constant as possible, col. 6, lines 60-68; reference face, col. 11, lines 35-40), each said feature area of the reference image also encompassing a predetermined individually recognizable component of the reference image (capture changes in wrinkles and map from one face to another, col. 3, lines 55-60; subregions include eyes, nose, mouth, and surrounding region, col. 6, lines 30-35); wherein the identifying step further identifies feature areas on the input image or on the other image corresponding to the predefined feature areas on the reference image, all such corresponding feature areas representing the same individually recognizable image component (capture changes in wrinkles and map from one face to another, col. 3, lines 55-60).

Blanz et al. does not explicitly disclose in the main embodiment wherein said characteristics comprise at least one ratio (a) of the dimensions of the determined feature area within the input image, or of the respectively corresponding feature area within the other image, to (b) the respectively corresponding feature area in the reference image.

Blanz et al. describe creating a generalized model of human faces similar to the approach of DeCarlos et al., but instead of using a limited set of measurements and proportions between a set of facial landmarks, the densely sampled geometry of the exemplar faces obtained by laser scanning (Cyberware.TM.) are directly used (col. 2, lines 45-60).

It would have been obvious at the time of the invention to one of ordinary skill in the art to use at least one ratio (a) of the dimensions of the determined feature area within the input image, or of the respectively corresponding feature area within the other image, to (b) the respectively corresponding feature area in the reference image, as taught in the prior art, in place of the method in the main embodiment of Blanz et al., because these techniques are already described in the art, and may be desired if a less advanced technique is determined more suited to the particular caricaturing purpose.

Regarding claims 5 and 13, Blanz et al. disclose the method and system according to claims 1 and 9. Blanz et al. further disclose determining a caricature level parameter (coefficients multiplied by a constant factor, col. 7, lines 45-50) defining the amount of caricaturing to be applied to the input image in dependence on the intended size of the caricature image to be generated (increase distance from the average face, shape coefficient multiplied by a constant factor col. 7, lines 40-50; "weight" transformation, and the "fullness of face" description, col. 7, lines 50-10 and fig. 3); and inputting said determined caricature level parameter to the transformation processes (coefficients multiplied by a constant factor, col. 7, lines 45-50), thereby applying the caricaturing transformations in dependence on the caricature level.

Regarding claims 6 and 14, Blanz et al. disclose the method and system according to claims 1 and 9. Blanz et al. further disclose the input image comprises an image of a human face (figs 1-7), the identified feature areas each containing a particular human facial feature as said image component encompassed therein (subregions include eyes, nose, mouth, and surrounding region, col. 6, lines 30-35).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELLE ENTEZARI whose telephone number is (571)270-5084. The examiner can normally be reached on M-Th, 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571)272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michelle Entezari/
Examiner, Art Unit 2624

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624